

target cell, wherein said recombinant DNA construct comprises a promoter operably linked to a reading frame coding for:

- i) a signal peptide component;
- ii) a binding component comprising a chimeric antibody, a CDR-grafted antibody or a fragment thereof;
- iii) a transmembrane component;
- iv) two or more different cytoplasmic signalling components selected from the group consisting of the cytoplasmic domains of a zeta, eta or epsilon chain of the T-cell receptor, CD28, the γ chain of a Fc receptor, a cytokine receptor, a colony stimulating factor receptor, a tyrosine kinase or an adhesion molecule, B29, MB-1 CD3 delta, CD3 gamma, CD5 or CD2, or a fragment thereof, wherein at least one of said two cytoplasmic signaling components is derived from a membrane spanning polypeptide; and optionally
- v) one or more spacer regions linking any two or more of said i) to iv) components wherein when said chimeric receptor is expressed in the effector cell and the binding component binds the cell surface antigen on the target cell, a signal is transduced in the effector cell via the cytoplasmic signalling components.

21. (Twice amended) The DNA delivery system according to claim 11 wherein the binding component is a chimeric or CDR-grafted single chain Fv fragment.

22. (Twice amended) The DNA delivery system according to claim 11 wherein the binding component is a chimeric or CDR-grafted Fab' fragment.

23. (Twice amended) The DNA delivery system according to claim 11 wherein the transmembrane component is the alpha, beta or zeta chain of the T-cell receptor, CD28, CD8, CD4, a cytokine receptor or a colony stimulating factor receptor, or a fragment thereof.

24. (Twice amended) The DNA delivery system according to Claim 11 wherein the transmembrane component is derived from all or part of CD28.

28. (Twice amended) The DNA delivery system according to Claim 23 wherein the cytoplasmic signalling components comprise CD28 or the zeta chain of the T-cell receptor or a fragment thereof.

29. (Twice amended) The DNA delivery system according to claim 11 wherein the cytoplasmic signalling components are in any order relative to one another.

30. (Twice amended) The DNA delivery system according to claim 11 wherein said DNA coding for components i) to iv) additionally codes for one or more spacer regions linking the binding component or fragment thereof ii) and the transmembrane component iii).

31. (Twice amended) The DNA delivery system according to claim 52 wherein two or more different spacer regions link the binding component ii) and the transmembrane component iii), one region being coded for by said first recombinant DNA construct and the other different region being coded for by said second recombinant DNA construct.

33. (Twice amended) The DNA delivery system according to claim 11 wherein the spacer region is the extracellular region of CD8, CD4 or CD28 or a fragment thereof.

34. (Twice amended) The DNA delivery system according to claim 11 wherein the spacer region is of an antibody constant region or a fragment thereof.

35. (Twice amended) The DNA delivery system according to claim 11 wherein the spacer region is an antibody hinge region or a fragment thereof linked to all or part of the extracellular region of CD28 or a fragment thereof.

36. (Twice amended) The DNA delivery system according to claim 11 wherein the means for delivery of said construct is a viral vector or a non-viral vector.

38. (Twice amended) The DNA delivery system according to Claim 36
wherein the non-viral vector is a targeted non-viral vector.

39. (Twice amended) The DNA delivery system according to Claim 11
wherein the means for delivery of said construct is an antibody targeted liposome.

40. (Twice amended) The DNA delivery system according to Claim 11
wherein the recombinant DNA construct is condensed DNA and the means for delivery
of said construct is antibody targeting of said condensed DNA.

41. (Twice amended) The DNA delivery system according to Claim 11
wherein the recombinant DNA construct is protamine or polylysine condensed DNA
and the means for delivery of said construct is antibody targeting of said protamine or
polylysine condensed DNA.

42. (Twice amended) The DNA delivery system according to Claim 11
wherein the recombinant DNA construct is naked DNA and the means for delivery of
said construct is antibody targeting of said naked DNA.

46. (Twice amended) An effector cell selected from a lymphocyte, a
dendritic cell, a B-cell, a haematopoietic stem cell, a macrophage, a monocyte or a NK
cell, transfected with the DNA delivery system according to claim 11.

47. (Twice amended) An effector cell according to Claim 46, wherein the effector
cell is a cytotoxic T-lymphocyte.

Please add the following claim:

52. A DNA delivery system according to claim 11 wherein the recombinant
DNA construct encodes either the light chain or the heavy chain of said chimeric
antibody or CDR-grafted antibody or a fragment thereof, said DNA delivery system